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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/777,203

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Timothy M. Schmidl

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TEXAS INSTRUMENTS INCORPORATED  
P O BOX 655474, M/S 3999  
DALLAS, TX 75265

EXAMINER

GHULAMALI, QUTBUDDIN

ART UNIT

PAPER NUMBER

2611

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

01/16/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

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<b>Office Action Summary</b>	<b>Application No.</b> 09/777,203	<b>Applicant(s)</b> SCHMIDL ET AL.	
	<b>Examiner</b> Qutub Ghulamali	<b>Art Unit</b> 2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10/10/2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10-22 is/are allowed.
- 6) ☒ Claim(s) 1-9, 23-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

1. This Office Action is responsive to the Remarks/Amendment filed on 10/10/2006.

### ***Response to Remarks/Amendments***

2. Applicant's Remarks with respect to claims 1-9 and 23-32, after the amendment, have been considered but are moot in view of the new ground(s) of rejection. The rejection based on the new art follows.

### ***Claim Objections***

3. Claim 2 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 2 recites same or similar limitation of a transmitter transmitting overhead bits to a receiver without further limiting claim 1.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-7, 23-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rogard (US Patent 4,718,066) in view of Osthoff et al (US Patent 6,126,310).

Regarding claims 1, 23 and 27, Rogard discloses a data communications system and a method for transmission of signals from a transmitter to a receiver, the transmitter comprising:

the transmitter end applying to a plurality of original data bits that are to be transmitted to the receiving end an encoding algorithm that produces overhead bits, (encoding means for encoding a message in sets of data blocks (plurality of data bits), each block including additional check symbols enabling detection and correction within the block including redundant data blocks (col. 3, lines 20-35). Rogard however, does not explicitly show,

wherein the overhead bits are different from the original data bits;

transmitting end transmitting the original data bits without the overhead bits in a first transmission to the receiving end; and

transmitting end refraining from transmitting the overhead bits until the transmitting end receives an indication of error in reception from the receiving end. Osthoff, in a similar field of endeavor discloses a method of communicating data from a transmitting end (TM) to a receiving end (RC) apparatus in a mobile communication system wherein, the overhead bits are different from the original data bits (use of parity bits) (col. 8, lines 32-38; col. 9, lines 34-38);

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transmitting end transmitting the original data bits without the overhead bits in a first transmission to the receiving end (co. 9, lines 38-47); and transmitting end refraining from transmitting the overhead bits until the transmitting end receives an indication from the receiving end that the original data have not been correctly received at the receiving end (it is implied that the transmitter cannot send any information to the receiver unless the receiver due to many uncorrectable errors in the original packet or signal via the error check means (ECM) directly outputs a request ARQ for a retransmission of the packet from the transmitter, meaning that the transmitter does not (refrains) from transmitting until it gets a request from the receiver to do so) (col. 9, lines 34-47; col. 10, lines 19-29, 43-52). It would have been obvious to a person skilled in the art at the time of the invention to have the transmitter transmit original data without the overhead bits and transmitting end refraining from transmitting the overhead (parity) bits as taught by Osthoff in the system of Rogard because with specific reordering of information bits, more important bits can be placed in the data packets for a greater protection with minimum retransmission errors conserving transmission time.

Regarding claims 2 and 24, the claim is not further limiting claim 1, and having same or similar limitations as recited in claim 1, is likewise rejected.

Regarding claims 3, 29, 31 and 32, Rogard discloses all limitations of the claim. Rogard, however, is not explicit regarding receiving end combining a received version of the original data bits and a received version of the overhead bits to produce a combined set of received bits and the receiving end applying to the combined set of received bits

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a decoding algorithm that corresponds to said encoding. However, Osthoff discloses receiving end combining a received version of the original data bits and a received version of the overhead bits, and applying to the combined set of received bits a decoding algorithm that corresponds to said encoding process (col. 10, lines 14-18). It would have been obvious to a person skilled in the art at the time the invention was made to combine received original data bits and overhead bits to produce a combined set of received bits and apply it to a decoding process as taught by Osthoff in the system of Rogard because by combining and decoding together the received bits, quality of the transmission can be checked and reproduction of the original data bits can advantageously achieved.

Regarding claim 4, Rogard discloses all limitations of the claim. Rogard, however, does not explicitly show a mapping or storing to determine operation has not resulted in the original data bits and in response to determination the receiving end combining the received version of the original received transmission with the overhead bits and applying a decoding process that corresponds to encoding process. Osthoff, however, discloses receiving end applying an error detection procedure (ECM) a mapping operation, and in response to determination the receiving end combining the received version of the original received transmission with the overhead bits and applying a decoding process that corresponds to encoding process (col. 9, lines 34-45; col. 10, lines 14-18). It would have been obvious to a person of ordinary skill in the art at the time of the invention to apply mapping to determine operation has not resulted in the original data bits and receiving end applying an error detection procedure to the

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result of storing, and in response to determination the receiving end combining the received version of the original received transmission with the overhead bits and applying a decoding process that corresponds to encoding process as taught by Osthoff in the system of Rogard because by combining and decoding together the received bits, quality of the transmission can be checked and reproduction of the original data bits can be adequately achieved.

Regarding claims 5 and 25, Rogard and Osthoff disclose all limitations of the claim. The combination however, is not explicit regarding Viterbi encoding and decoding algorithms. As best understood by the examiner, the Viterbi encoding and decoding is conventionally well known and available to a person skilled in the art of signal communication to utilize because it can provide efficient and reliable data reception and transmission or encoded signals.

As per claims 6, 26 and 30, Rogard discloses all limitation of the claim. Rogard however, is not explicit about the receiving end applying an error detection procedure to a result of decoding to determine whether decoding has resulted in original data bits and transmit to the transmitting end a request for retransmission of the original data. Osthoff in a similar field of endeavor discloses receiving end applying an error detection procedure via ECM to a result of decoding to determine whether decoding has resulted in original data bits and transmit to the transmitting end a request for retransmission of the original data (it is implied that the transmitter cannot send any information to the receiver unless the receiver due to many uncorrectable errors in the original packet or signal via the error check means (ECM) directly outputs a request ARQ for a

retransmission of the packet from the transmitter, meaning that the transmitter does not (refrains) from transmitting until it gets a request from the receiver to do so) (col. 10, lines 14-29). It would have been obvious to one of ordinary skill in the art at the time of the invention to have the receiving end apply an error detection procedure to a result of decoding to determine whether decoding has resulted in original data bits and transmit to the transmitting end a request for retransmission of the original data as taught by Osthoff in the system of Rogard because process of early detection of errors can mitigate transmission and retransmission of message queuing and maximize response time.

As per claim 7, Rogard discloses all limitation of the claim. Rogard however, does not explicitly show transmitter end retransmitting the original data bits to the receiving end and, in response to a determination by the receiving end that said retransmission of the original data bits has not been received correctly, the receiving end combining a received version of the retransmitted original data bits with said received version of the overhead bits to produce another combined set of received bits, and the receiving end applying said decoding algorithm to said another combined set of received bits. Osthoff in a similar field of endeavor discloses transmitter end retransmitting the original data bits to the receiving end and, in response to a determination by the receiving end that said retransmission of the original data bits has not been received correctly, the receiving end combining a received version of the retransmitted original data bits with said received version of the overhead bits to produce another combined set of received bits, and the receiving end applying said



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decoding algorithm to said another combined set of received bits (col. 3, lines 54-67; col. 5, lines 11-50). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the receiving end combining a received version of the retransmitted original data bits with said received version of the overhead bits to produce another combined set of received bits, and the receiving end applying said decoding algorithm to said another combined set of received bits as taught by Osthoff in the system of Rogard because early detection of errors in the process can mitigate transmission and retransmission of message queuing and maximize channel response time.

As per claim 28, Rogard and Osthoff combination discloses every feature of the claimed invention except a convolutional encoding algorithm. Official Notice is taken that both the concept and the advantages of using convolutional encoding algorithm are conventionally well known and expected in the art. Therefore it would have been obvious to a person skilled in the art at the time of invention to include convolution encoding or coding algorithm in the combined system of Rogard and Osthoff because use of convolutional algorithm for coding of signals provides a robust and reliable signal transmission.

### ***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

7. Claim 8 is rejected under 35 U.S.C. 102(e) as being anticipated by Osthoff et al (US Patent 6,126,310).

Regarding claim 8, Osthoff discloses a method and system of communicating data from a transmitter to a receiver comprising:  
the receiving end receiving from the transmitter a first transmission including original data bits without the overhead bits, wherein the overhead bits are different from the original data bits and produced at the transmitting end (TR) by operation of an encoding algorithm applied to the original data bits (col. 9, lines 34-45);  
receiving end determining whether the original data bits have been correctly received and responsive to a determination that the original data bits have not been received correctly, the receiving end transmitting to the transmitting end a request for transmission of the overhead bits (col. 8, lines 31-47, 48-60).

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Osthoff et al (US Patent 6,126,310).

Regarding claim 9, Osthoff discloses all limitations of the claim above, except a convolutional encoding algorithm. Official Notice is taken that both the concept and the advantages of using convolutional encoding algorithm are conventionally well known and expected in the art. Therefore it would have been obvious to a person skilled in the art at the time of invention to include convolution encoding or coding algorithm in the system of Osthoff because use of convolutional algorithm for coding of signals provides a robust and reliable signal transmission.

***Allowable Subject Matter***

10. Claims 10-15, 16-22 allowed.

***Conclusion***

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US Patents:

US Patent 6,850,559 to Driessen et al.

US Patent 6,671,849 to Tripathi et al.

US Patent 6,594,791 to Sipola.

US Patent 6,346,874 to Maeshima.

US Patent 6,314,541 to seyttter.

US Patent 6,728,920 to Ebersman.

US Patent 6,418,549 to Ramchandran et al.

US Pub. 2001/0056560 to Khan et al.

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Qutub Ghulamali whose telephone number is (571) 272-3014. The examiner can normally be reached on Monday-Friday, 7:00AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

QG.  
January 7, 2007.



JAY K. PATEL  
SUPERVISORY PATENT EXAMINER